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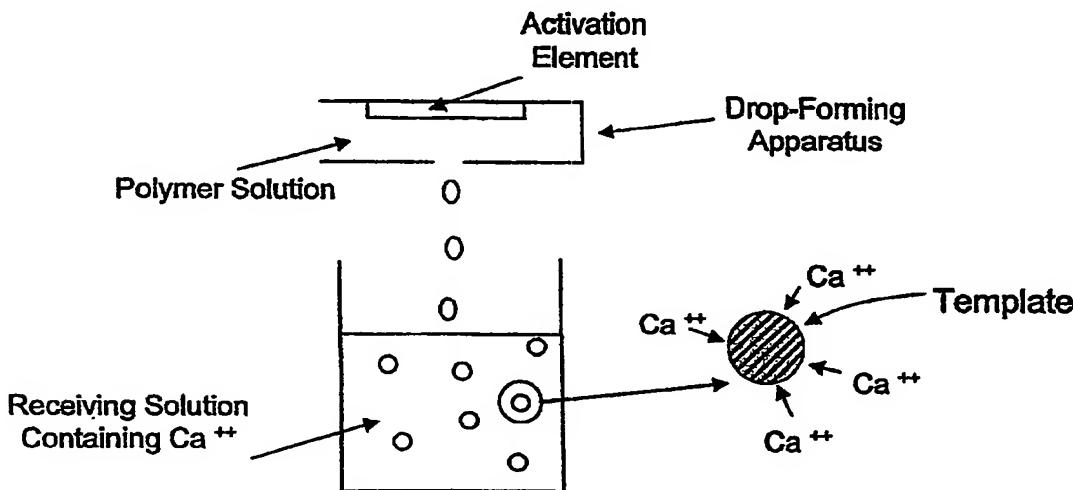
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(54) Title: POLYMER-BASED MICROSTRUCTURES



(57) Abstract: The present invention relates to the fields of controlled release of drugs, proteins, nucleic acids, and other pharmaceuticals. It also relates to delivery systems for these agents and other compounds. The invention also relates to stable encapsulation of cells and molecules. The invention provides a population of microstructures comprising a permeable polymer shell, wherein the standard variance in the volume of the microstructures is usually less than or equal to 20 %, preferably 10 %, of the mean, and wherein the diffusion characteristics of the polymer shell vary within the population of microstructures. It also provides for an apparatus and a method of forming a population of microstructures, which method for making microstructures by introducing drops of a polymer solution into a receiving solution under conditions that permit cross-linking of the polymer in the receiving solution. Microstructures of calcium-cross-linked alginate with a chitosin capsule are disclosed.

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